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TEST ADAPTER

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Test adapter, especially for checking the cables and connections in telecommunication networks, having at least one connecting cable (2, 3) with standardized plug (4), through which the contacts of a standard connector socket are laid on the plug or clamping connections (6) of the test adapter, characterized in that the test adapter has an electric test circuit (13) for testing the loop current and/or the polarity of the standard connector socket.
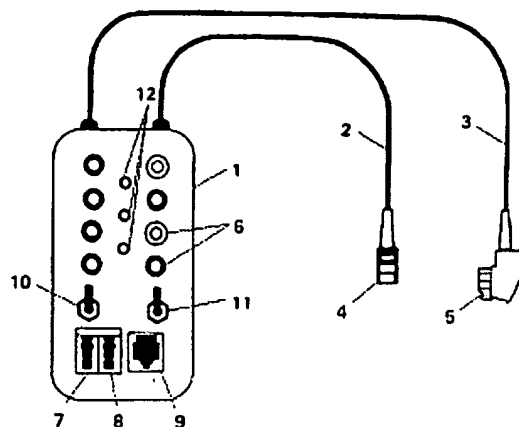
The present invention concerns a test adapter, especially for checking cables and connections in telecommunication networks, having at least one connection cable with standardized plug, via which the contacts of a standard connector socket are placed on the plug or clamping connections of the test adapter.

In telecommunication installations the connection lines are routinely checked at standard connection boxes provided for the operation of telecommunication devices such as telephones, telephone responders, telefaxes, etc. In order to be able to get at the contacts of the standardized connector sockets with suitable measuring devices, removal of the connection boxes to be tested is avoidable without suitable special auxiliary devices. The individual leads of the connections lines are then checked, e.g., by means of clamping test indenters in connection with suitable measuring devices at the contact points of the connection boxes. After checking, the connection boxes are then installed again.

The TAE and the RJ45 standards, among others, are among the current connection standards in the telecommunication field. During installation work, it is particularly conventional in connection boxes of these standards to check the lines a and b connected to the telephone network for transposition. Whether the loop current flowing through these lines is sufficient to operate the end devices reliably must also be checked.

German design patent 92 01 938 proposes a test adapter in which the contacts of a standard plug are carried over a connecting cable to the plug sockets on which an arbitrary measuring device can be connected. Direct access to the individual contact sites of the standard connection box is thus advantageously obtained without having to remove and install them again.

It is disadvantageous in this previously known test adapter that additional voltage and current measuring devices are required even for the above basic testing processes (a/b-transposition, loop current). As a result the testing process would become more complicated and there is an increased cost expenditure.

The present invention proposes to offer a test adapter with which a direct connection to the contact sites of standard connection boxes can be produced and with which basic test functions can be carried out without using additional measuring devices.

This problem is solved in a test adapter of the initial type in that the test adapter has an electric test circuit for testing the loop current and/or the polarity of the standard connector socket.

In the test adapter of the invention there is direct access to the contacts of a standard connector socket through a connecting cable provided with a standardized plug. This access can be used directly by means of an electric test circuit that is integrated in the test adapter to conduct the testing of the loop current and/or the polarity. Advantageously, suitable test circuits are commercially available as prefabricated structural elements. Additional tests can be conducted directly with appropriate measuring devices because the contacts of the standard connector socket lie on the plug or clamping connections of the test adapter. A reliable and rapid checking of telecommunication installations is possible with the test adapter according to the invention. The removal and reinstallation of standard connection boxes are completely avoided, which results in a substantial saving of time. Erroneous measurements are essentially excluded by the hard-wired test circuit integrated into the test adapter.

An advantageous refinement of the invention test adapter consists in the fact that one or more standard connector sockets are also integrated besides the plug or clamping connections. The contacts of the standard connector socket can be placed either on the plug or clamping connections or on the integrated standard connector socket by means of electric switching elements. This has the advantage that the testing of the standard connection box with the test adapter can take place when one or more end devices are simultaneously connected. If the test adapter has connector sockets of various standards such as TAE N, TAE F and RJ45, it can also serve for connecting end devices with different plug connection standards to one standard connection box.

In order to be able to use the invention test adapter for checking standard connection boxes of different standards, it is expedient to provide exchangeable connection cables with arbitrary plug standards that can be connected to the test adapter. In this manner, the test adapter can be used universally and can be adapted to future or less common plug standards at any time.

An embodiment of the present invention is elucidated in the following with reference to the drawings.

Figure 1 shows the test adapter in top view and Figure 2 shows the wiring diagram.

Figure 1 shows a test adapter (1) that is equipped with two connection cables (2) and (3), one of which (2) has an RJ45 plug (4) and the other (3) has a TAE F/N plug (5). Eight 4-millimeter laboratory sockets (6) on which the contacts of the standard plugs (4) and (5) can be

switched through are incorporated into the housing of the test adapter (1). For simplification, the laboratory sockets (6) can have color codes or inscriptions that facilitate assignment to the individual connection lines. The test adapter (1) also has at its disposal a TAE N-connection socket (7), a TAE F-connection socket (8) and an RJ45-connection socket (9). The contacts of the standard connector plugs (4) and (5) can be optionally placed on the laboratory sockets (6) or the standard connection sockets (7, 8, 9) by means of a selector switch (10). A test circuit that indicates via luminous diodes (12) whether lines a and b are transposed, whether the loop current is too small or whether the connection is in order can be activated by another switch (11).

Figure 2 shows the pertinent switching diagram. The contacts of the TAE N/F plug (5) can be placed either on the TAE connector sockets (7) and (8) or on the laboratory sockets (6) by means of the selector switch (10). The six contacts of the TAE plug are assigned here to the laboratory sockets 2-7. The RJ45 plug (4) is hard-wired with the laboratory sockets (6). Either contacts 1 and 2 of the TAE connection or contacts 4 and 5 of the RJ45 connection can be placed on a test circuit (13) by means of the tactile device (11). Said contacts correspond to the lines a and b connected to the telephone network. The test circuit indicates the state of the connection box tested via luminous diodes. As described above, whether connections a and b are interchanged and whether the loop current amounts to less than 20 milliamperes are tested. An end device can no longer be operated reliably below this value. A suitable circuit is available under order number 68-193-22, e.g., under the designation "linechecker" at ELV-Elektronik, Leer [no-load]. If necessary, additional exchangeable connection cables can be connected to the RJ45 connector socket (9) in order to be able to test any arbitrary connection boxes of additional standards with the test adapter.

Claims

1. Test adapter, especially for checking cables and connections in telecommunication networks, having at least one connection cable (2, 3) with standardized plug (4), via which the contacts of a standard connector socket are placed on plug or clamping connections (6) of the test adapter, characterized in that the test adapter has an electric test circuit (13) for testing the loop current and/or the polarity of the standard connection box.

2. Test adapter according to Claim 1, characterized by at least one standard connector socket (7, 8, 9) integrated in the test adapter, on which the contacts of the standard connector socket to be tested are optionally switched through by means of electric switching elements (10).

3. Test adapter according to at least one of Claims 1 and 2, characterized in that additional interchangeable connection cables with arbitrary plug standards can be connected to the test adapter.
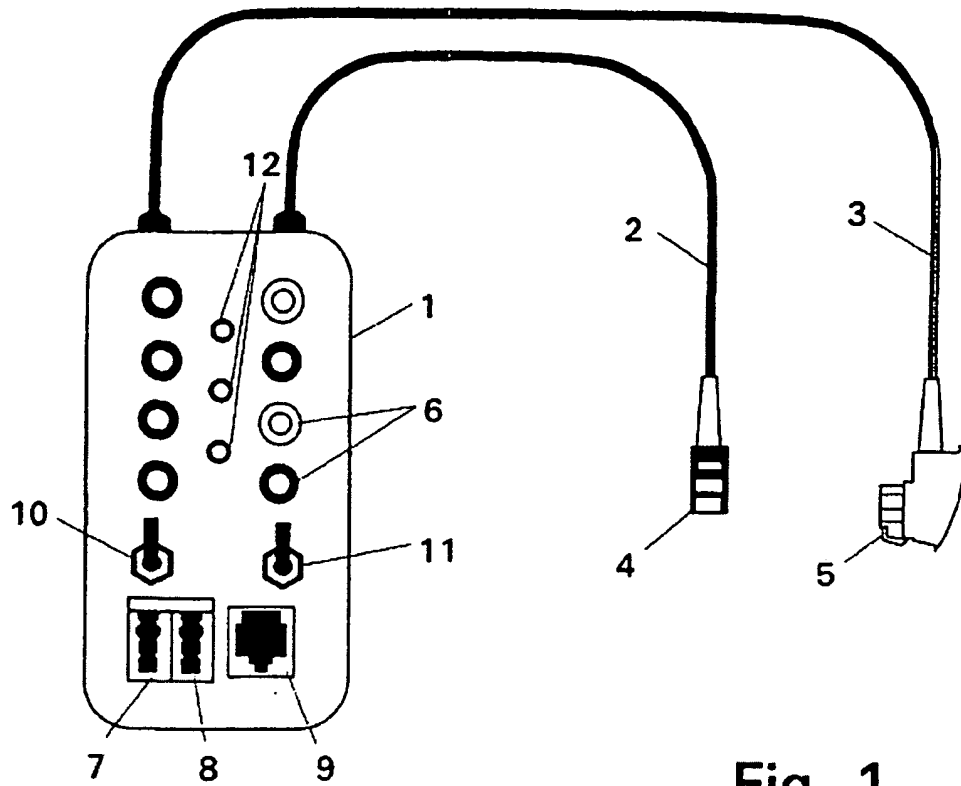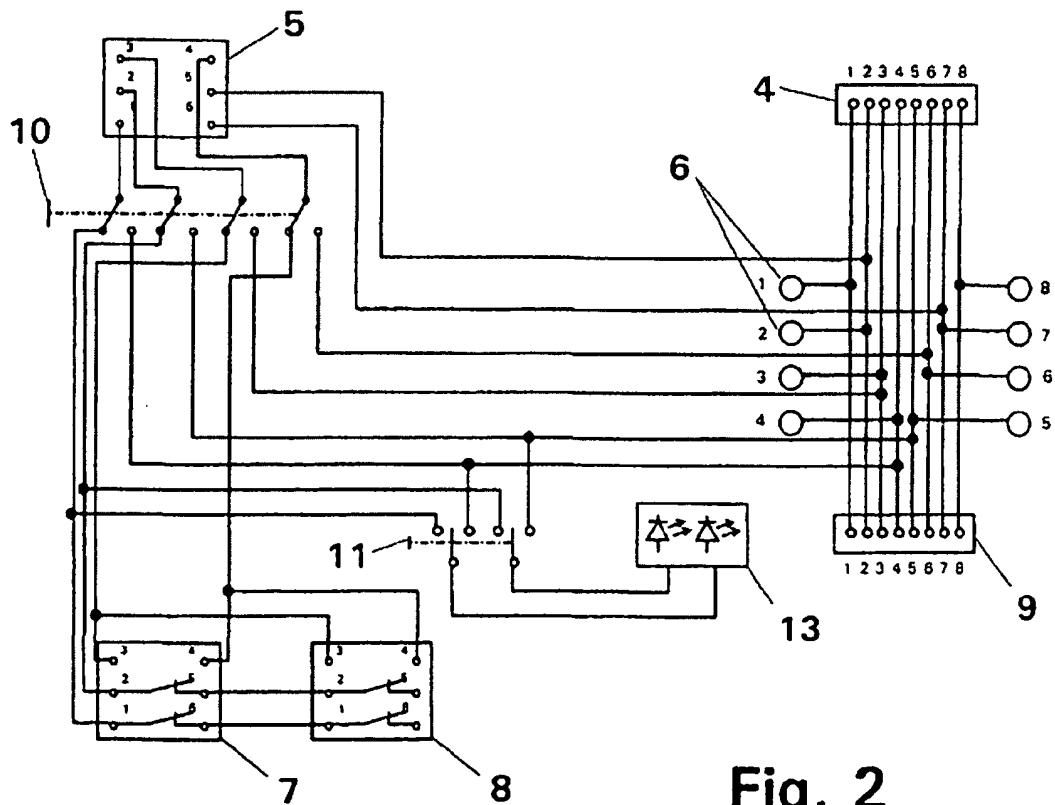
Fig. 1

Fig. 2